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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/590,564	06/08/2000	Patrick Kevin Egan	RO995-122B	1897

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EXAMINER

ALCALA, JOSE H

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 01/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/590,564

Applicant(s)

EGAN ET AL.

Examiner

Jose H Alcala

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 31 August 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 8/31/01 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is not clear regarding what is meant by "a plurality of variable resistances between said at least one source location and said plurality of load locations to distribute substantially the same amount of current from said at least one source location to each of said plurality of load locations". Is that just a label for the space between the location of the loads or is there an actual variable resistor connecting the two loads. It is further unclear how can the "at least one source location" distribute substantially the same amount of current from it to each of said plurality of load locations?

Claim 4 is not clear in the recitation: "a plurality of variable resistances arranged on said powerplane to distribute current so the voltage difference between said load locations is reduced to near zero". Is that just a label for the space between the location of the loads or is there an actual variable resistor connecting the two loads?

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: Where is the power source located with regard to the conductive sheet, and where is the load located with regard to the conductive sheet and the power source. The elements: "power source" and "at least one load" are not positively claimed, and it is not clear if they are part of the device or if that limitation is just an intended use for the device. In addition, in lines 7-8, the limitation: "means to distribute substantially the same amount of current from said power source to all of said at least one load", is unclear regarding the actual structure that will accomplish that function.

Claim 12, is unclear in what is meant by: "said means to distribute substantially the same amount of current further comprises a plurality of resistance variations in the structure of the powerplane", is it just a label or is there another device?.

Claim 13, lines 2 and 3 are indefinite in the use of the words: "near" and "distant". Those terms are used when comparing two elements, so for one element to be labeled as: "near" or "distant", it has to be compared to another element.

Claim 14 is unclear regarding what is meant by: " a plurality of circular and non-circular resistances disposed on said conductive sheet at an angle other than parallel or perpendicular to said at least one source location" .

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2,4-6,8,8,11-12 rejected under 35 U.S.C. 102(b) as being anticipated by Bajorek et al. (US Patent No. 4,328,530). As best understood by the examiner:

Regarding Claim 1, Bajorek teaches a powerplane for use in a backplane power distribution system, comprising: (a) a conductive sheet (reference number 33); (b) at least one source location (reference number 40) on said conductive sheet for coupling to a power source; (c) a plurality of load locations (reference number 41) on said conductive sheet for coupling to at least one load; (d) a plurality of variable resistances between said at least one source location and said plurality of load locations to distribute substantially the same amount of current from said at least one source location to each of said plurality of load locations.

Regarding Claim 2, Bajorek teaches that said powerplane includes a plurality of load pins (the pins that go inside reference numbers 41) and at least one source pin (the pin that go inside reference numbers 40) and wherein said at least one source

location and said plurality of load locations comprise vias (reference numbers 40 and 41) for receiving a corresponding one of said at least one source pin and said load pins, at least a portion of said vias having plated perimeters for electrically connecting said powerplane to said load pins and source pins.

Regarding Claim 4, Bajorek teaches a backplane power distribution system for distributing power from a power source, comprising: a laminate (device of figure 4) having a plurality of interleaved dielectric layers (reference numbers 30,32,34,36) and conductive layers (reference numbers 31,33,35,37') wherein at least one of said conductive layers is a powerplane (reference number 31) for distributing said power; and a plurality of source locations (reference number 40) and load locations (reference number 41), said source locations being provided to couple said powerplane to said power source and said load locations being provided to couple said powerplane to at least one load, a plurality of variable resistances arranged on said powerplane to distribute current so the voltage difference between said load locations is reduced to near zero.

Regarding Claim 5, Bajorek teaches that said source locations and said load locations define a plurality of holes (reference numbers 40 and 41) passing through said laminate, said holes forming vias (reference numbers 40 and 41) in each of said layers of said laminate, said vias being adapted to couple said powerplane to said loads and said power source.

Regarding Claim 6, Bajorek teaches said laminate further includes source pins (pins that goes inside reference number 40) and load pins (pins that goes inside

reference number 41), and wherein a first number of said vias in at least one of said conductive layers are provided with plated perimeters (see reference numbers 82,83 and 84) for connection to said load pins and said source pins and a second number of said vias in said at least one of said conductive layer are provided with an insulated perimeter (see reference numbers 34) for insulating said second number of vias from said load pins and source pins.

Regarding Claim 8, the limitation: "said load locations are provided to couple said powerplane to at least one circuit board", is an intended use limitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

Regarding Claim 9, Bajorek teaches a powerplane for use in a backplane power distribution system, comprising: (a) a conductive sheet (reference number 33); (b) means to couple a power source to said conductive sheet (pins in vias, reference number 40); (c) means to couple at least one load to said conductive sheet (pins in vias, reference number 41); (d) means to distribute (metallic sheet reference number 33) substantially the same amount of current from said power source to all of said at least one load.

Regarding Claim 11, Bajorek teaches that said means to couple said power source and said means to couple said at least one load to said conductive sheet are

selected from the group comprising: connector straps, pads, and vias (references number 40 and 41) which receive a plurality of source pins and a plurality of load pins.

Regarding Claim 12, Bajorek teaches that said means to distribute substantially the same amount of current further comprises a plurality of resistance variations in the structure of the powerplane.

Regarding Claim 13, Bajorek teaches that said plurality of load locations further comprises near load locations and distant load locations with said near load locations being nearer to said plurality of source locations than said distant load locations, and wherein said means to distribute substantially the same amount of current further comprises: means to variably increase the resistance of the powerplane between said plurality of source locations and said load locations, and means to substantially reduce the voltage difference between said near load locations and said distant load locations. See Figure 5.

Regarding Claim 14, Bajorek teaches a powerplane for use in a backplane power distribution system, comprising: (a) a conductive sheet (reference number 33); (b) at least one source location (reference number 40) on said conductive sheet for coupling to a power source; (c) a plurality of load locations (reference number 41) on said conductive sheet for coupling to at least one load; (d) a plurality of circular and non-circular resistances disposed on said conductive sheet at an angle other than parallel or perpendicular to said at least one source location .

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3,7,10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bajorek et al. (US Patent No. 4,328,530).

Regarding Claims 3,7 and 10, Bajorek teaches all the elements of the instant claimed invention as stated supra for claims 1,4 and 9 but fails to explicitly teach that said conductive sheet comprises copper. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the conductive sheet of copper, since it is well known and used in the art, and offers great electrical conduction. In addition, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references teach some of the elements of the instant claimed invention: Massey (US Patent No. 4,694,123), woodman (US Patent No. 5,016,138), Sakurai et al. (US Patent No. 4,984,132), Arisaka (US Patent No. 5,102,352), Sengoku et al. (US Patent No. 4,616,292), Holbert et al. (US Patent No.

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4,450,029), Bunner et al. (US Patent No. 4,511,950), Inasaka (US Patent No. 5,136,471), Conn et al. (US Patent No. 5,418,690), Estes et al. (US Patent No. 5,451,720), Van Lydegraf (US Patent No. 5,523,921) and Egan et al. (5,841,074).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose H Alcala whose telephone number is (703) 305-9844. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Talbott can be reached on (703) 305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JHA
December 16, 2002



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